Document ID: EDF-2738
Revision ID: 0
Effective Date: 3.07.02

Engineering Design File

PROJECT FILE NO. 020996

Staging, Storage, Sizing and Treatment Facility

Fiber Optic Selection

Prepared for:
U.S. Department of Energy
Idaho Operations Office
Idaho Falls, Idaho

Idaho National Engineering and Environmental Laboratory

Form 412.14
07/24/2001
Rev. 03

ENGINEERING DESIGN FILE

1. Title: SSSTF Fiber Optic Selection

2. Project File No.: 020996

3. Site Area and Building No.: INTEC

4. SSC Identification/Equipment Tag No.: SSSTF

5. Summary:

To support the Staging, Storage, Sizing and Treatment Facility (SSSTF) operations, SSSTF personnel will need access to the INEEL data network system. Such data transmission consists of e-mail and intranet/internet information. Perhaps the most important use of the data network system by SSSTF personnel will be the transfer of information to support the data management and waste tracking.

While this data transmission is normally made via unshielded twisted pair copper cable within buildings, transmission from building-to-building, area-to-area, and site-to-town within the INEEL is made via fiber optic cable. Fiber optic cable is capable of high data transmission rates over longer distances with greater reliability. It will be necessary for the SSSTF to tie into this existing fiber optic network. Access to the fiber optic network will be through the existing fiber optic system at the Idaho Nuclear Technology Center (INTEC). A connection will be made by routing a fiber optic cable from the SSSTF future Administration Trailer to a communication hub in CPP-666.

The Telecommunications group, which owns and operates the fiber optic systems at the INEEL, selected Gigabit Ethernet hardware to support the anticipated data networking needs of SSSTF. Gigabit represents the transmission rate (10^9 bits/second) while Ethernet is a communication scheme/protocol that allows different devices such as computers connected to the local network to communicate with one another. Further, Gigabit Ethernet is the preferred standard for new installations. With this hardware selected, and the distance from the trailer to CPP-666 given, the fiber optic equipment vendor's literature requires the use of single-mode fiber. A 12 fiber cable was chosen to support the initial and future networking needs and to provide spares for possible failures and any future growth.

In summary, the fiber optic cable and hardware selected will offer the access, speed, and reliability needed to support SSSTF operations.

6. Review (R) and Approval (A) and Acceptance (Ac) Signatures:
(See instructions for definitions of terms and significance of signatures.)

	R/A	Typed Name/Organization	Signature	Date
Performer		T.M. Hipp, P.E. / 6770	Thomas M. Hipp	2/6/02
Checker	R	W.H. Reed, P.E. / 67A0	W. H. Reed	2/6/02
Independent Peer Reviewer	R	M.H. Doornbos, P.E. /6710	Mark Doornbos (ORB Chair.)	3/8/02
Approver	A	W.H. Reed, P.E. / 67A0	W. H. Reed	2/6/02
Approver	A	C.J. Hurst, P.E. / 6790	Proxy	3/6/02
Requester	A	R.L. Davison / 6250	R. L. Davison	3/7/02

7. Distribution:
(Name and Mail Stop)

8. Records Management Uniform File Code (UFC): 0286

Disposition Authority: A17-30-c-1	Retention Period: Until dismantlement or disposal of facility, equipment, system, or process; or when superseded or obsolete, whichever is earlier. (EPI)

EDF pertains to NRC licensed facility or INEEL SNF program?: ☐ Yes ☒ No

9. Registered Professional Engineer's Stamp (if required)